IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A structure comprising a substrate bearing, on at least part of its surface, a photocatalytic antisoiling layer ~~based on~~ comprising titanium dioxide (TiO_2), ~~characterized in that~~ wherein said photocatalytic antisoiling layer is coated with a thin nonporous layer~~, containing~~ comprising silicon and oxygen and having a covering power, wherein said thin nonporous layer ~~capable of~~ mechanically and chemically ~~protecting~~ protects the underlying photocatalytic layer, while maintaining the photocatalytic activity of the titanium dioxide (TiO_2) ~~TiO_2~~.

Claim 2 (Currently Amended): The structure ~~as claimed in~~ of claim 1, ~~characterized in that~~ wherein said thin nonporous layer ~~containing~~ comprising silicon and oxygen is present in the form of a continuous film.

Claim 3 (Currently Amended): The structure of claim 1 ~~as claimed in either of claims 1 and 2~~, ~~characterized in that~~ wherein said thin layer ~~containing~~ comprising silicon and oxygen is present in the form of a film that conforms to the surface asperities of the underlying photocatalytic antisoiling layer.

Claim 4 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 3~~, ~~characterized in that~~ wherein the thin nonporous layer ~~containing~~ comprising silicon and oxygen is a layer of at least one silicon-oxygen compound ~~chosen from~~ selected from the group consisting of SiO_2, SiOC, SiON, SiO_x, ~~where~~ wherein $x<2$, and SiOCH.

Claim 5 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 4, characterized in that~~ wherein the thin nonporous layer ~~containing~~ comprising silicon and oxygen is a layer of at least one silicon-oxygen compound ~~with which~~ further comprising at least one compound ~~chosen~~ selected from the group consisting of Al_2O_3 and ZrO_2 ~~is associated~~.

Claim 6 (Currently Amended): The structure as claimed in claim 5, ~~characterized in that~~ wherein the Al/Si, the Zr/Si, or the Al/Si and Zr/Si ~~(Al and/or Zr)/Si~~ atomic ratio does not exceed 1.

Claim 7 (Currently Amended): The structure of claim 5 ~~as claimed in either of claims 5 and 6, characterized in that~~ wherein the structure comprises Al_2O_3 and wherein the Al/Si ratio is ~~between~~ from 0.03 ~~and~~ to 0.5~~, in particular between 0.05 and 0.1~~.

Claim 8 (Currently Amended): The structure of claim 5 ~~as claimed in one of claims 5 to 7, characterized in that~~ wherein the structure comprises ZrO_2 and wherein the Zr/Si ratio is ~~between~~ from 0.05 ~~and~~ to 0.4.

Claim 9 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 8, characterized in that~~ wherein the thin nonporous layer ~~containing~~ comprising silicon and oxygen has a thickness of at most 15 nm~~, especially at most 10 nm and in particular at most 8 nm, being preferably at most 5 nm, or about 5 nm, in particular 2 to 3 nm~~.

Claim 10 (Currently Amended): The structure as claimed in claim 1 ~~one of claims 1 to 9, characterized in that~~ wherein the photocatalytic antisoiling layer ~~titanium-dioxide-based layer~~ consists of TiO_2 alone or of TiO_2 doped with at least one dopant ~~chosen especially~~ selected from[[:]] the group consisting of N[[;]] pentavalent cations ~~such as~~ of Nb, pentavalent cations of Ta ~~and~~ pentavalent cations of V, [[;]] Fe, [[;]] and Zr.

Claim 11 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 10, characterized in that~~ wherein the ~~TiO_2-based layer~~ photocatalytic antisoiling layer has been deposited by

a sol-gel method,

or by a pyrolysis~~, especially chemical vapor deposition,~~ method

or by room-temperature vacuum sputtering,

~~where appropriate magnetron and/or ion-beam sputtering~~, using a metal or TiO_x target, ~~where~~ wherein $x<2$, and in an oxidizing atmosphere, or using a TiO_2 target in an inert atmosphere, the TiO_2 produced by the sputtering then ~~having possibly~~ optionally being subjected to a heat treatment so as to be in the crystallized state in a photocatalytically active form.

Claim 12 (Currently Amended): The structure ~~as claimed in~~ of claim 1 ~~one of claims 1 to 11, characterized in that~~ wherein the thin nonporous layer ~~containing~~ comprising silicon and oxygen has been deposited by room-temperature vacuum sputtering~~, where appropriate magnetron and/or ion-beam sputtering,~~ using a target of Al (8 at%)-doped Si, in an Ar/O_2 atmosphere, at a pressure of 0.2 Pa.

Claim 13 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 12, characterized in that it includes~~ further comprising, immediately below the photocatalytic antisoiling layer ~~TiO_2-based layer~~, an underlayer having a crystallographic structure for assisting in the crystallization, by heteroepitaxial growth, in the anatase form of the ~~TiO_2-based~~ photocatalytic antisoiling upper layer~~, especially an underlayer consisting of $ATiO_3$ where A denotes barium or strontium~~.

Claim 14 (Currently Amended): The structure of claim 1 ~~as claimed in one of claims 1 to 13, characterized in that~~ wherein the substrate ~~consists of~~ comprises a sheet,

whether plane or having curved faces, wherein the sheet comprises at least one material selected from the group consisting of monolithic glass, ~~or~~ laminated glass, glass-ceramic, [[or]] and a hard thermoplastic,~~ such as polycarbonate~~,

or ~~else of~~ glass fibers, or glass-ceramic fibers,

wherein said ~~sheets~~ sheet or said fibers ~~having, where appropriate,~~ have, optionally, received at least one other functional layer before application of ~~the TiO_2-based layer~~ photocatalytic antisoiling layer or ~~of~~ or have, optionally, received a layer for assisting in the crystallization of the ~~latter~~ photocatalytic antisoiling layer by heteroepitaxial growth.

Claim 15 (Currently Amended): The structure ~~as claimed in~~ of claim 14,comprising the at least one other functional layer, wherein ~~characterized in that~~ the at least one other functional layer ~~or the other functional layers are chosen~~ is selected from the group consisting of ~~layers~~ at least one layer having an optical functionality, at least one thermal control layer ~~layers~~ and at least one conducting layer ~~layers~~, and wherein ~~also~~, if the substrate ~~is made of~~

comprises glass or glass-ceramic, the at least one other functional layer acts ~~layers acting~~ as a barrier to the migration of alkali metals from the glass or from the glass-ceramic.

Claim 16 (Currently Amended): A process for manufacturing [[a]] the structure of claim 1 ~~as defined in one of claims 1 to 15~~, comprising ~~characterized in that~~

depositing an optionally doped TiO_2 layer ~~is deposited~~ on a substrate ~~made of~~ comprising glass, ~~or~~ glass-ceramic, ~~or~~ polycarbonate-type hard plastic, of the sheet type, ~~or on~~ glass fibers, or glass-ceramic fibers,

wherein said optionally doped TiO_2 layer ~~being~~ is optionally subjected to a heat treatment in order to give it a photocatalytic property if ~~this~~ the photocatalyic property is not provided by the conditions used for depositing the optionally doped TiO_2 layer, ~~it~~, and

depositing ~~then~~ a thin layer ~~containing~~ comprising silicon and oxygen ~~as defined in one of claims 1 to 9 is deposited~~ on said photocatalytic layer, to form the structure of claim 1.

Claim 17 (Currently Amended): The process ~~as claimed in~~ of claim 16, ~~characterized in that~~ wherein the deposition of [[a]] the TiO_2 layer and ~~that of~~ the thin layer ~~containing~~ comprising silicon and oxygen are carried out in succession at room temperature, by vacuum sputtering, ~~where appropriate magnetron and/or ion-beam sputtering~~, in the same chamber, the conditions being the following:

- for depositing the TiO_2 ~~-based~~ layer, supply in AC or DC mode, at a pressure of 1-3 mbar and in an oxygen/inert gas (argon) atmosphere, using a Ti or TiO_x, target, where $x = 1.5$ to 2; and

- for depositing the layer ~~containing~~ comprising silicon and oxygen, supply in AC mode at a pressure of 0.1 to 1.0 Pa and in an Ar/O_2 atmosphere using a target having a high silicon content,

the deposition of the TiO_2 layer being optionally preceded by the deposition of an underlayer for assisting in the crystallization by epitaxial growth in the anatase form of the TiO_2 layer.

Claim 18 (Currently Amended): The process of claim 16 ~~as claimed in either of claims 16 and 17~~, ~~in which the coating of~~ wherein the substrate is a glass or glass-ceramic substrate ~~is carried out~~, wherein ~~characterized in that~~, before application of the TiO_2 layer ~~or of the underlayer associated therewith~~, at least one layer forming a barrier to the migration of alkali metals present in the glass or glass-ceramic substrate is deposited on the substrate, and wherein, optionally, an annealing or toughening operation ~~then possibly being~~ is carried out [[,]] after the TiO_2 layer and the thin ~~silicon-based~~ layer covering the ~~latter~~ TiO_2 layer have been deposited~~, at a temperature of between 250°C and 550°C, preferably between 350°C and 500°C, in the case of the annealing operation and at a temperature of at least 600°C in the case of the toughening operation~~.

Claim 19 (Currently Amended): The process of claim 18 ~~as claimed in one of claims 16 to 18~~, ~~characterized in that~~ wherein , after the ~~optional~~ application of the at least one layer forming a barrier to the migration of alkali metals and before application of the TiO_2 layer ~~or the underlayer associated with the latter~~, at least one functional layer selected from the group consisting of at least one layer ~~chosen from layers~~ having an optical functionality, at least one thermal control ~~layers~~ layer, and at least one conducting layer ~~layers~~ is deposited, wherein

said ~~functional layers~~ at least one functional layer is ~~being~~ advantageously deposited by vacuum sputtering~~, where appropriate magnetron and/or ion-beam sputtering~~.

Claim 20 (Currently Amended): A single ~~Single~~ or multiple glazing~~, in particular for motor vehicles or buildings~~, comprising, on at least one face respectively, [[a]] the structure as defined in claim 1 ~~one of claims 1 to 15, said face being especially that facing the outside, or possibly also that facing the inside~~.

Claim 21 (New): The structure of claim 11, wherein the TiO_2 is subjected to a heat treatment so as to be in the crystallized state in a photocatalytically active form.

Claim 22 (New): The structure of claim 11, wherein the room-temperature vacuum sputtering comprises magnetron sputtering.

Claim 23 (New): The structure of claim 11, wherein the room-temperature vacuum sputtering comprises ion-beam sputtering.

Claim 24 (New): The structure of claim 11, wherein the room-temperature vacuum sputtering comprises magnetron sputtering and ion-beam sputtering.

Claim 25 (New): The structure of claim 14, wherein the sheet or the fibers have received at least one other functional layer before application of the photocatalytic antisoiling layer.

Claim 26 (New): The structure of claim 14, comprising a layer for assisting in the crystallization of the photocatalytic antisoiling layer by heteroepitaxial growth.

Claim 27 (New): The process of claim 16, wherein the TiO_2 layer is doped.

Claim 28 (New): The process of claim 17, comprising depositing an underlayer for assisting in the crystallization by epitaxial growth in the anatase form of the TiO_2 layer.

Claim 29 (New): The process of claim 18, comprising carrying out an annealing operation, wherein the annealing operation is carried out at a temperature of between 250°C and 500°C.

Claim 30 (New): The process of claim 18, comprising carrying out a toughening operation, wherein the toughening operation is carried out at a temperature of at least 600°C.